

Jasper County

Lead Mining Site

Institutional Controls



Missouri Department of Natural Resources

Jasper County Lead Mining Site

**(Part of the Large Tri-State Historic
Mining District)**

**From the 1850s to 1960s highest
producing zinc and lead mining area
in the world!**

**Missouri is still #1 in the US in lead
production**

Tri-State Historic Lead Mining District

Legend

Missouri Counties



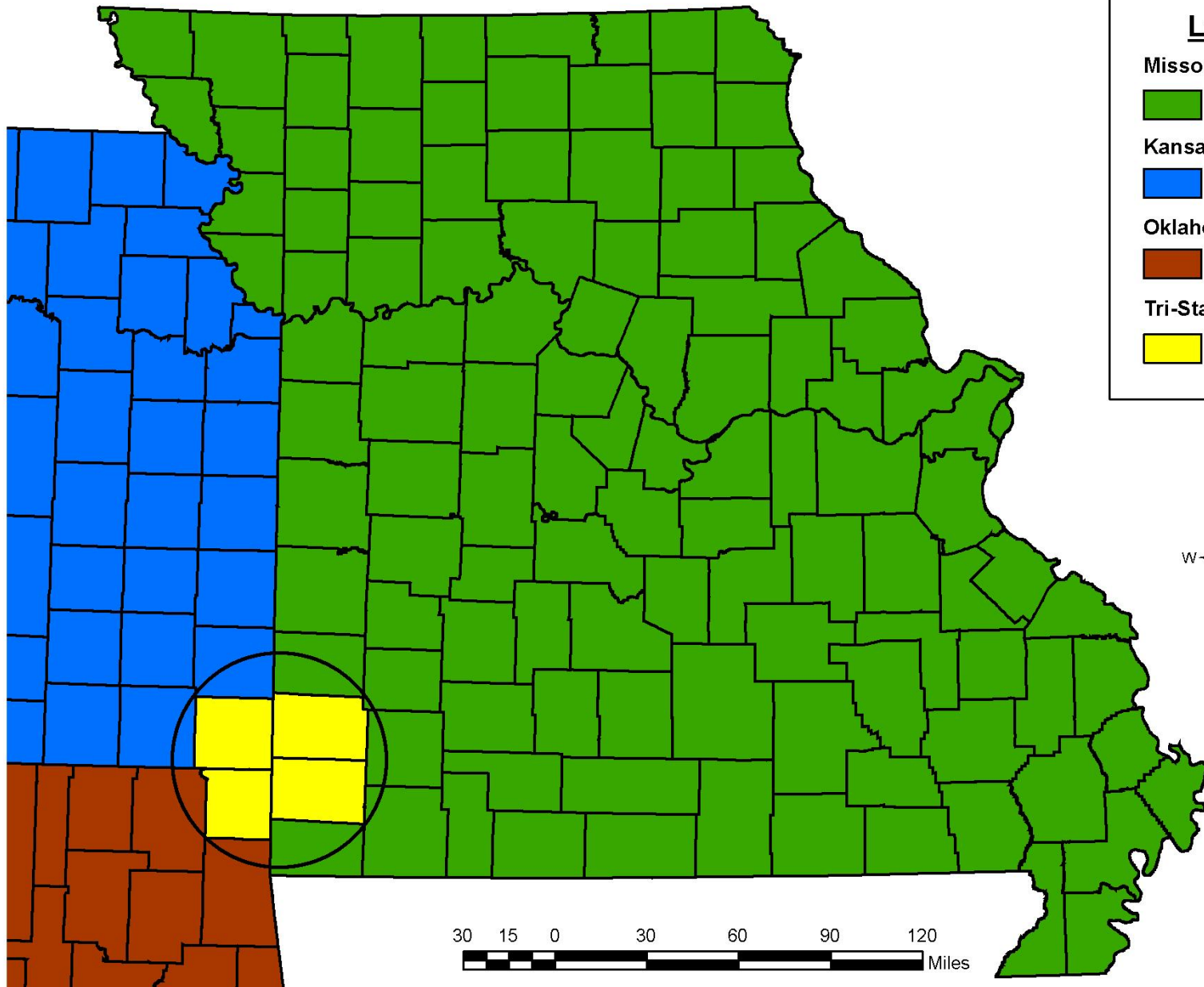
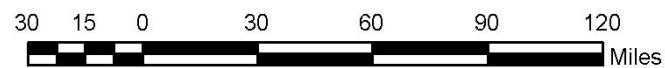
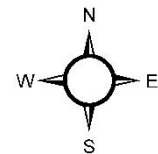
Kansas Counties



Oklahoma Counties



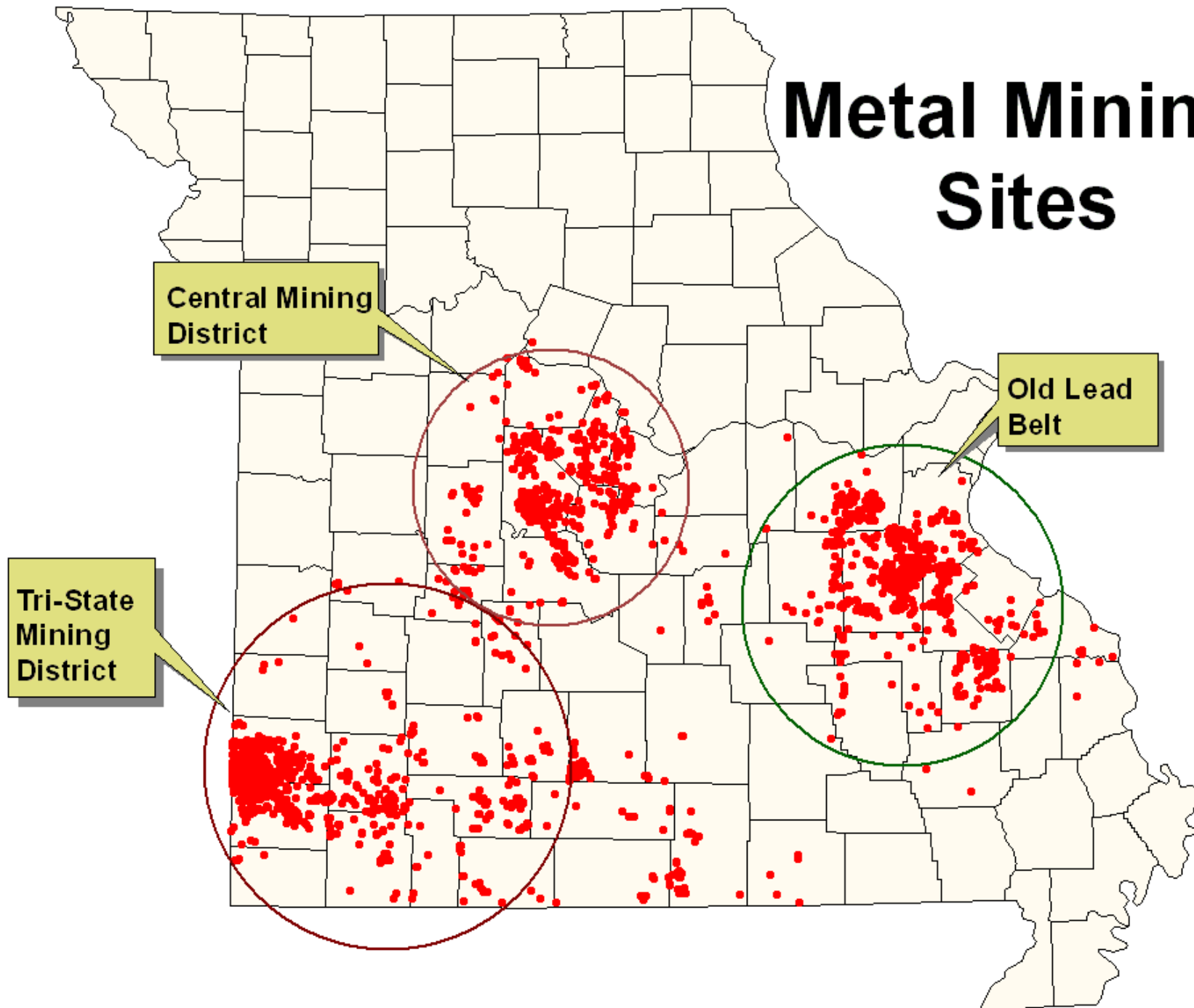
Tri-State Counties



Jasper County Site



Metal Mining Sites



Unregulated mining and smelting activities in Jasper County left behind waste material that has contaminated

7000 thousand acres,

many miles of streams, and

50 square miles of groundwater.



Subsidence pond, chat and tailings.



Jasper County Lead Site (also known as Oronogo-Duenweg Mining Belt Site) was placed on EPA's National Priorities List in 1991



Jasper County mine-scarred land



Removals and Remedial Actions Accomplished

2500 Residential Yard Removals in Jasper County

1 Rural Public Water System Established in Jasper County

Extended lines from existing water systems for about 250 residences.

Residential drinking water deep wells drilled in Jasper

Part of new highway bypass covering much chat.

Joplin Missouri in Jasper County



One of fastest growing
communities in Missouri

'98 4 14

Community Advisory Group 1994

**Assisted the agencies in making
decisions for the site.**

Local Citizens

Community leaders from most towns

Real Estate leaders and developers

Financial and other business leaders

Educators

Health representatives

Farmers

**By the late 1990s more
environmental issues had been
discovered in Jasper and Newton
Counties.**

NPL - Newton County Mining Site

NPL - Newton County TCE near Joplin

NPL - Pool's Prairie TCE site south of Neosho

Poultry and egg, Hog and Beef CAFOs

Several Potentially polluting Industries

CAG evolved into the Jasper/Newton Counties Environmental Task Force in 1998.

Develop an Environmental Master Plan.

Address all environmental issues in 2 counties.

Address need for Institutional Controls.

**Make recommendations to local governments for
ordinances to use as IC s.**

Encourage state IC s.

**Create ways to keep environmental problems from
happening in the future.**

Task Force Achievements

(With federal, state and local agencies' help)

Geographic Information System (GIS) developed for environmental planning.

Lead Education Curriculum developed and implemented in school districts.

Jasper County Ordinance for development established.

With the state, helped implement well drilling regulations for Jasper and Newton Counties.

Received 501c 3 designation in order to be able to apply for more grants (not for profit organization)

New 2006 Route 249 Redevelopment Plan

Why are Institutional Controls so Necessary?

Fast economic growth in the county

Rapidly changing land-use

Widespread contamination

High potential for human exposure

Groundwater is impacted by Pb, Cd, TCE

Many miles of Pb, Zn, Cd impacted streams

Barren Chat & Tailings



More Need for Institutional Controls

Hundreds of drinking water wells contaminated with Pb, Cd, TCE.

Upper aquifer contaminated, lower aquifer not.

Contamination of lower aquifer possible with new deep wells.

Developers started building on contaminated land.

Many new homes then needed yard soil remediation.

Pattern for creating new yards for remediation and new contaminated wells had to be broken.

Some developers started to voluntarily request that EPA or DNR sample their land before construction so they could remediate before building.... A very good sign!

Missouri Department of Natural Resources

Wellhead Protection Special Area

ROD for groundwater required state to develop special well drilling area.

Many wells in the area contaminated with Pb or Cd or TCE

The upper aquifer is contaminated.

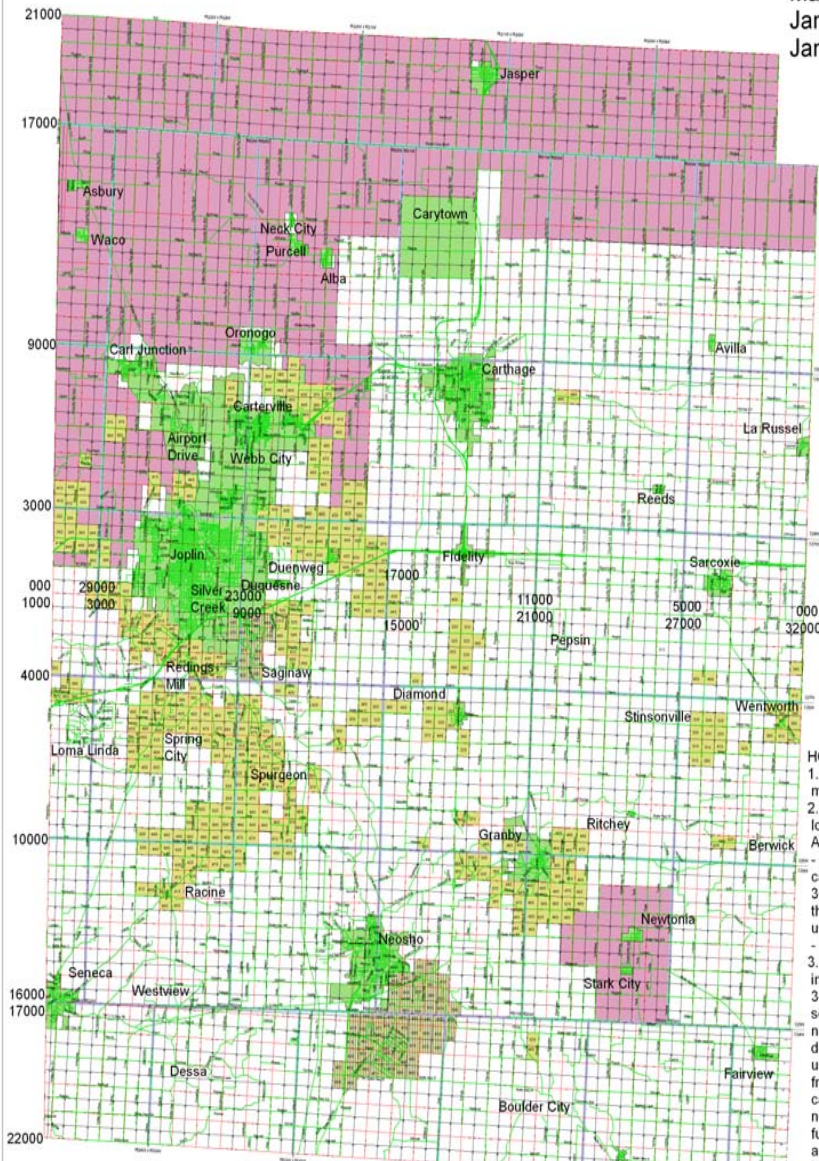
The lower aquifer is not contaminated.

Wells in the impacted area are required to have casing to a depth that is determined by MDNR regulations.

Map of impacted area has specific regulations.

Special Area 2- Newton and Jasper County Impact Areas and Casing Depth Map

Map Effective
January 2, 2006 to
January 1, 2007.



WARNING:
The impact areas of this map were delineated on the basis of known contaminated wells. New wells drilled into the upper aquifer near the impact areas have an increased chance of encountering contamination. Also, contamination could exist in other areas of the counties, especially in former mined areas and in areas where little or no groundwater quality data exists. Groundwater does move over time, so the impact areas can change. The impact areas represent groundwater conditions derived from EPA and DNR analytical data.

NOTE:
Groundwater from all new wells drilled after January 1, 2002 must be sampled and analyzed for lead and cadmium plus TCE in TCE areas.

HOW TO USE THIS MAP

1. Locate the proposed well on map.
2. If the proposed well is not located in a yellow impact area, Area 1 construction rules apply - set no less than 80 feet of casing extending no less than 30 feet into bedrock and seal the lowermost 30 feet of casing using approved grout materials - 10 CSR 23-3.090 (1).
3. If the proposed well is located in a yellow impact area, read the 3-digit number in the quarter section and use the 3-digit number as the required casing depth in feet. Grout the casing using positive displacement from the bottom up. Use the calculated grout volume necessary to accomplish full-length grouting of the annular space between the

Yellow- contaminated with Pb, Cd, TCE

Green- City water districts and extensions

Pink- Public water districts

Jasper County 2006 Environmental Contamination Ordinance

Building permits required for dwellings, child occupied facilities, and recreation areas.

All appropriate county offices must approve permit.

GIS maps outline areas that may be contaminated.

Property must be sampled if in the contamination area.

If property exceeds EPA action levels builder must remediate (fact sheet available to guide builders.)

If does not exceed EPA action levels permit granted.

Jasper County 2006 Environmental Contamination Ordinance (continued)

Builder develops remediation plan

County Health Department must approve remediation plan.

After remediation County Health Department does final inspection.

When approved, occupancy permit is granted.

County Health Department enforces ordinance restricting occupancy prior to completion of remediation.